

TNF α (E-4): sc-133193

BACKGROUND

Tumor necrosis factor β (TNF β), also known as lymphotoxin, is a pleiotropic cytokine. TNF α , also known as cachectin, is a smaller cytokine that binds to the same receptors producing a vast array of effects similar to those of TNF β . TNF β and TNF α share 30% amino acid homology and have similar biological activities. TNF β is produced by activated lymphocytes, including CD4⁺ T helper cell type 1 lymphocytes, CD8⁺ lymphocytes and certain B lymphoblastoid cell lines. TNF α is produced by several different cell types, which include lymphocytes, neutrophils and macrophages. TNF α and TNF β can modulate many immune and inflammatory functions, while having the ability to inhibit tumor growth. Target tumor cells must express TNF receptors 1 and 2 to be killed, with the p55 receptor mediating the cytotoxic response.

REFERENCES

1. Nedwin, G.E., et al. 1985. Human lymphotoxin and TNF genes: structure, homology and chromosomal localization. *Nucleic Acids Res.* 13: 6361-6373.
2. Aggarwal, B.B., et al. 1985. Human tumor necrosis factor. Production, purification and characterization. *J. Biol. Chem.* 260: 2345-2354.
3. Vilcek, J. and Lee, T.H. 1991. Tumor necrosis factor. New insights into the molecular mechanisms of its multiple actions. *J. Biol. Chem.* 266: 7313-7316.
4. Tartaglia, L.A., et al. 1993. Tumor necrosis factor's cytotoxic activity is signaled by the p55 TNF receptor. *Cell* 73: 213-216.

CHROMOSOMAL LOCATION

Genetic locus: TNF (human) mapping to 6p21.33.

SOURCE

TNF α (E-4) is a mouse monoclonal antibody raised against amino acids 77-233 of TNF α of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

TNF α (E-4) is recommended for detection of TNF α of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TNF α siRNA (h): sc-37216, TNF α shRNA Plasmid (h): sc-37216-SH and TNF α shRNA (h) Lentiviral Particles: sc-37216-V.

Molecular Weight of transmembrane TNF α : 26 kDa.

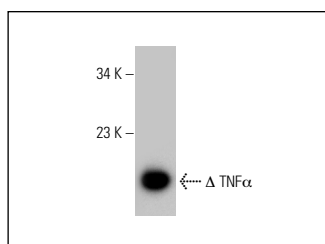
Molecular Weight of soluble TNF α : 17 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

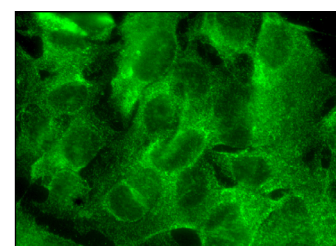
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TNF α (E-4): sc-133193. Western blot analysis of truncated human recombinant TNF α .



TNF α (E-4): sc-133193. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

1. Prema, A., et al. 2017. Fenugreek seed powder attenuated aluminum chloride-induced Tau pathology, oxidative stress, and inflammation in a rat model of Alzheimer's disease. *J. Alzheimers Dis.* 60: S209-S220.
2. Nalamolu, K.R., et al. 2018. Prevention of the severity of post-ischemic inflammation and brain damage by simultaneous knockdown of Toll-like receptors 2 and 4. *Neuroscience* 373: 82-91.
3. Fan, H., et al. 2019. The *in vitro* and *in vivo* anti-inflammatory effect of osthole, the major natural coumarin from *Cnidium monnieri* (L.) Cuss, via the blocking of the activation of the NF κ B and MAPK/p38 pathways. *Phytomedicine* 58: 152864.
4. Segalés, J., et al. 2020. Sestrin prevents atrophy of disused and aging muscles by integrating anabolic and catabolic signals. *Nat. Commun.* 11: 189.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.



See **TNF α (C-4): sc-133192** for TNF α antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.